

WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule from Nicotiana,
wherein said nucleic acid molecule comprises a nucleic
acid sequence selected from the group consisting of
5 SEQ. ID. No.:149, 151, 153, 155, 157, 159, 161, 163,
165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185,
187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207,
209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229,
231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251,
10 253, 255, 257, 259, 261, 263, 265, 267, 269, 271, 273,
275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295
and 297.
2. An isolated nucleic acid molecule from Nicotiana
15 wherein said nucleic acid molecule comprising a nucleic
acid sequence selected from the group consisting of
SEQ. ID. No. 299 through SEQ. ID. No. 357.
3. An isolated protein from Nicotiana, wherein said
20 protein comprises an amino acid sequence selected from
the group consisting of SEQ. ID. No.:. 150, 152, 154,
156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176,
178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198,
200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220,
25 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242,
244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264,
266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286,
288, 290, 292, 294, 296 and 298.

4. A transgenic plant, wherein said transgenic plant comprises the nucleic acid molecule of Claim 1 or 2.

5. The transgenic plant of Claim 4, wherein said plant is a tobacco plant.

6. A method of producing a transgenic plant, wherein said method comprises the steps of:

- (i) operably linking said nucleic acid molecule of any one of the Claims 1 or 2 with a promoter functional in said plant to create a plant transformational vector;
- (ii) transforming said plant with said plant transformational vector of step;
- (iii) selecting a plant cell transformed with said transformation vector; and
- (iv) regenerating a transformation plant from said transformed plant cell.

7. The method of Claim 6, wherein said nucleic acid molecule is in an antisense orientation.

8. The method of Claim 6, wherein said nucleic acid molecule is in a sense orientation.

9. The method of Claim 6, wherein said nucleic acid molecule is in a RNA interference orientation.

10. The method of Claim 6, wherein said nucleic acid molecule is expressed as a double stranded RNA molecule.

5 11. The method of Claim 6, wherein said double stranded RNA molecule is about 15 to 25 nucleotides in length.

12. The method of Claim 6, wherein said transgenic plant is a tobacco plant.

10 13. A method of selecting a plant containing a nucleic acid molecule, wherein said plant is analyzed for the presence of nucleic acid sequence selected from the group consisting of 149, 151, 153, 155, 157, 159, 161,
15 163, 165, 167, 169, 171, 173, 175, 177, 179, 181, 183, 185, 187, 189, 191, 193, 195, 197, 199, 201, 203, 205, 207, 209, 211, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231, 233, 235, 237, 239, 241, 243, 245, 247, 249, 251, 253, 255, 257, 259, 261, 263, 265, 267, 269, 271,
20 273, 275, 277, 279, 281, 283, 285, 287, 289, 291, 293, 295 and 297.

14. The method of selecting a plant of Claim 13, wherein said plant is analyzed by DNA hybridization.

25 15. The method of selecting a plant of Claim 13, wherein said DNA hybridization is Southern blot analysis.

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16. The method of selecting a plant of Claim 13, wherein said DNA hybridization is Northern blot analysis.
 17. The method of selecting a plant of Claim 13, wherein
5 said plant is analyzed by PCR detection.
 18. The method of Claim 13, wherein said plant is a tobacco plant.
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